

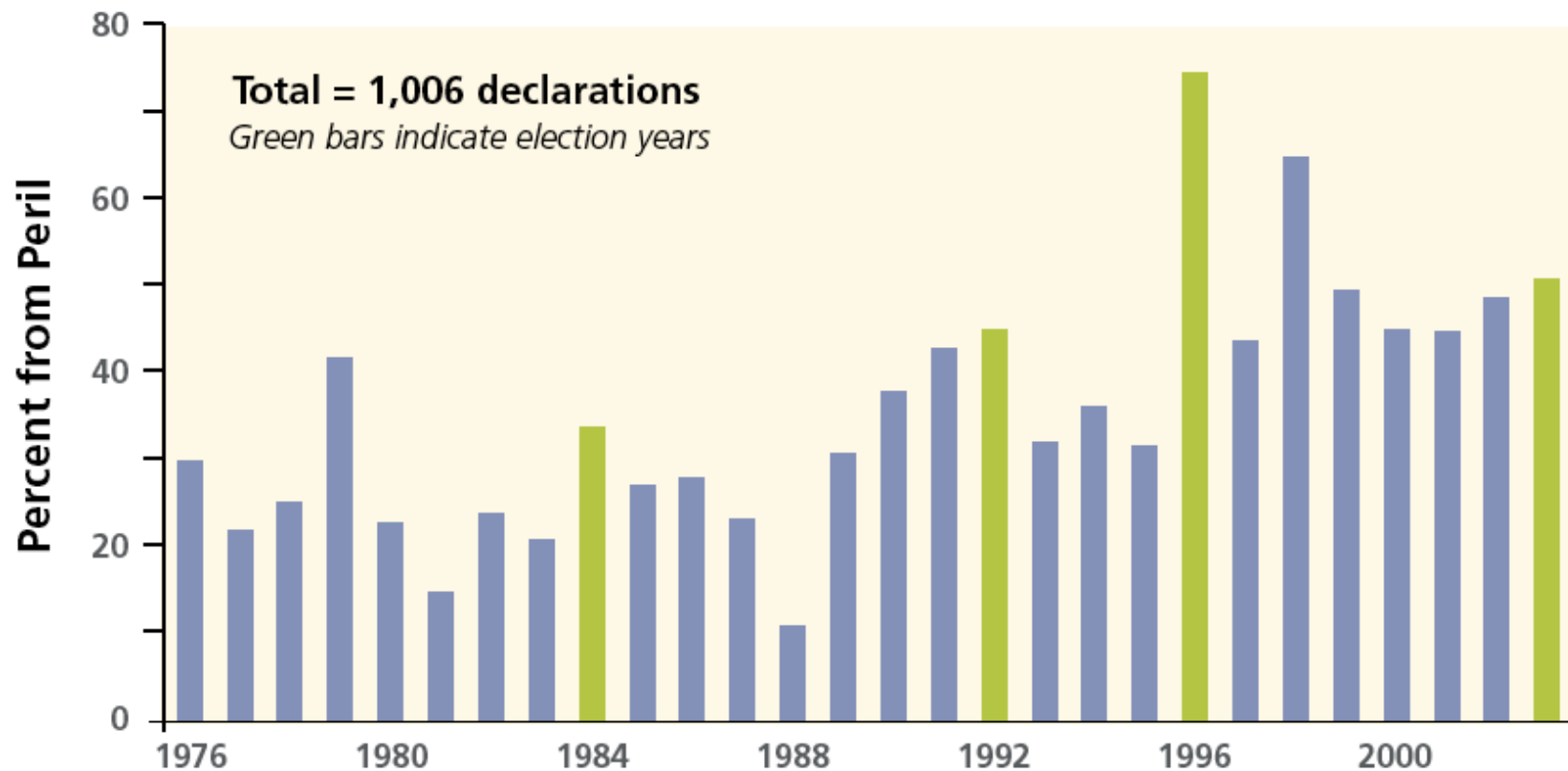
Climate Adaptation, Insurance & Public Finance

Planning for Economic Competitiveness

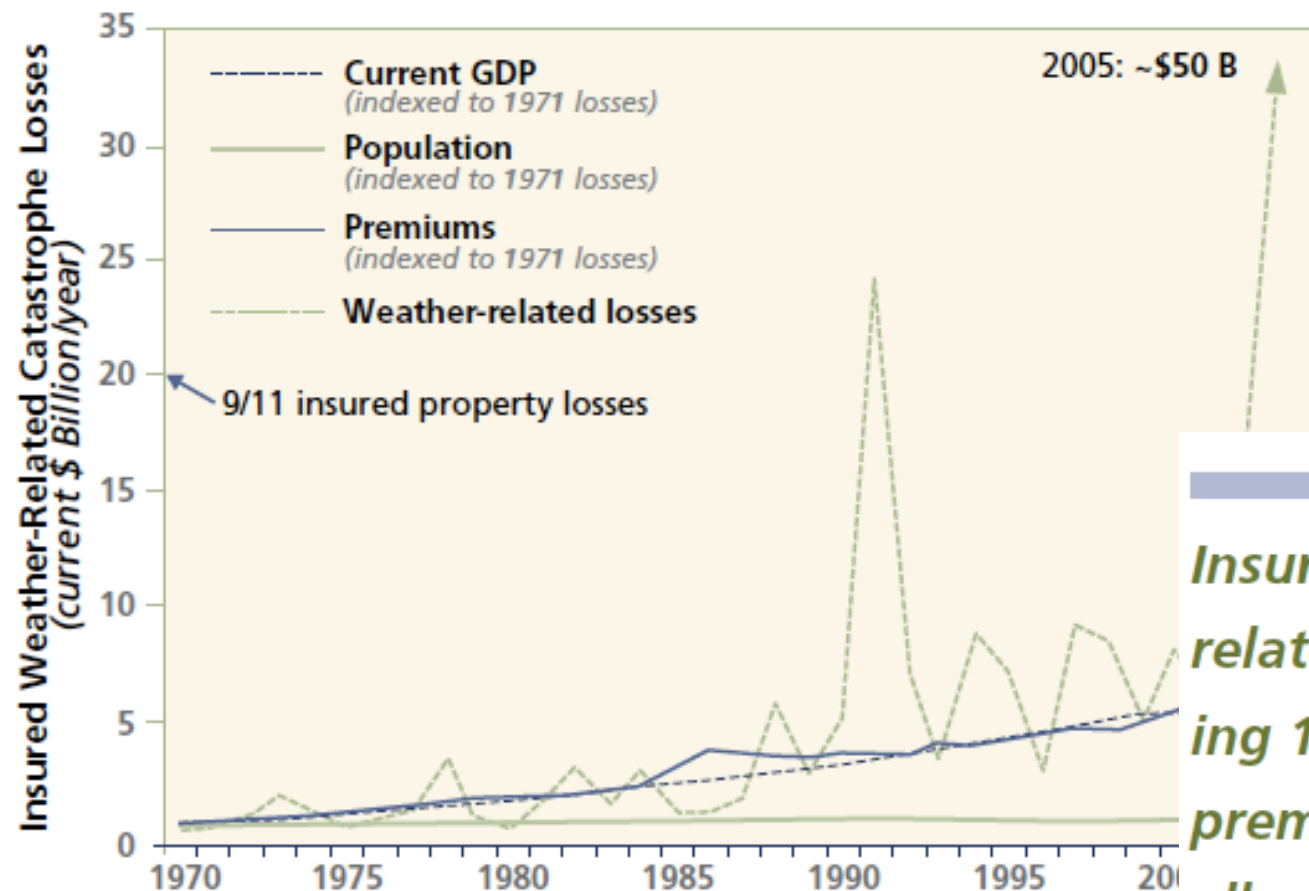
Sharlene Leurig
Senior Manager, Insurance Program
Ceres
April 10, 2010



US National Disaster Declarations 1976 – 2003



Source: Federal Emergency Management Agency (FEMA)



Insured U.S. weather-related losses are growing 10-times faster than premiums and the overall economy, and even faster when compared with population.


Development in Exposed Places is Driving Losses



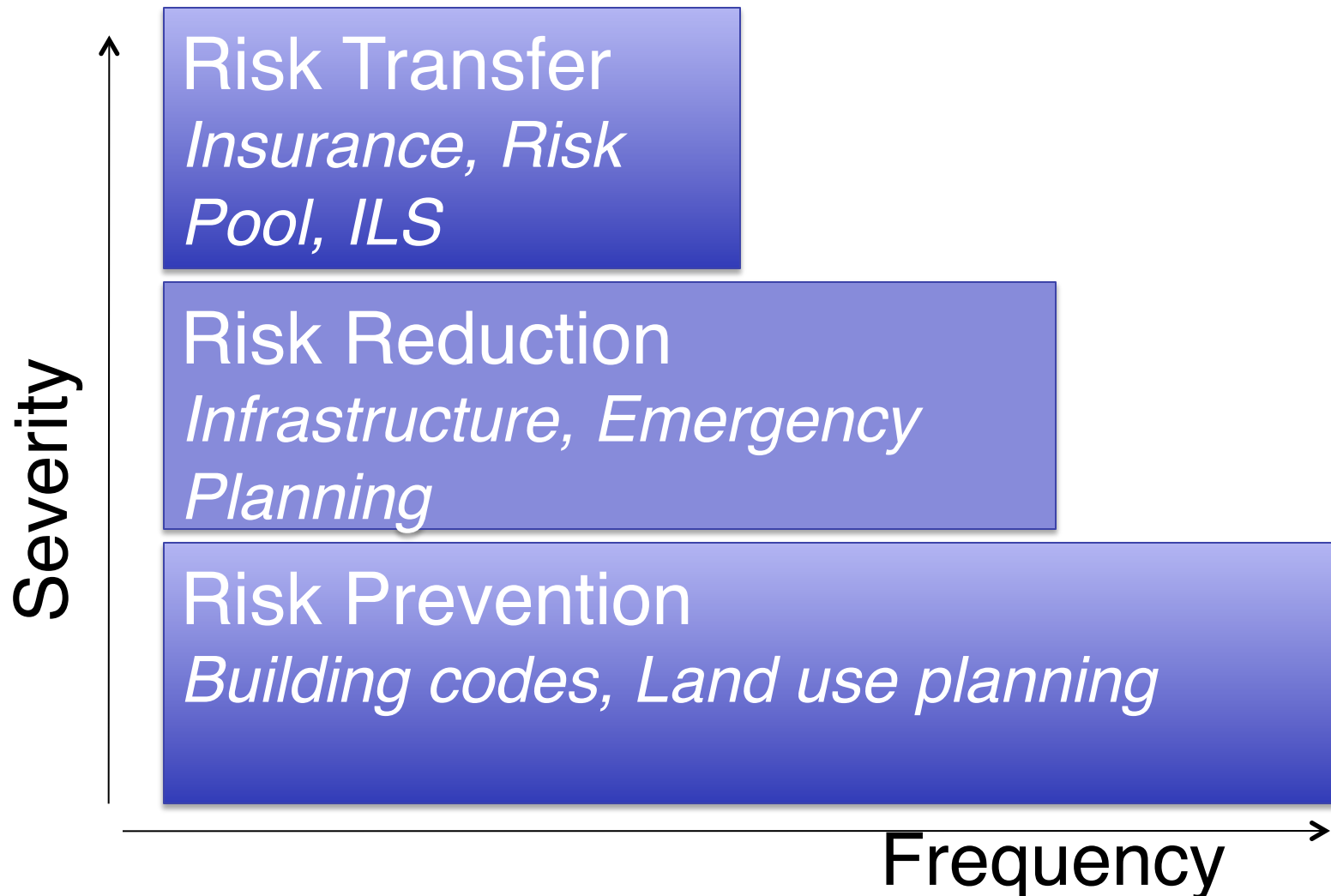
Marco Island, Florida

Exposure comes with a cost

- Regional economies may be becoming increasingly vulnerable to extreme events
➡ One indicator is shrinking insurance coverage
- Insurance is crucial component of resilience
- Availability of insurance for the perils with the greatest potential for harm is a bellwether of future adaptive capacity


Risk = Hazard x Exposure x Vulnerability


Risk Management Framework



Understanding risk is only the first obstacle to reducing risk

- Need to understand hazards in today's climate—acknowledging that elevations & event return periods already may differ from historical observations—and impacts of future scenarios
- Motivating individuals & institutions to adapt will require planners to communicate how actions that promote resiliency and adaptation also further stakeholders' real priorities
 - safe housing, stable communities, green space, job creation, revenue growth

Adaptation can drive economic development

- Home & infrastructure hardening creates construction jobs
- When adaptation makes a community more resilient to today's climate, can have measurable benefits for reducing insurance rates & increasing real estate values
- But adaptation can also have short term opportunity costs (not developing exposed land means no tax revenue) and long term costs if adaptive measures are overwhelmed by actual change

Financing Adaptation

- Example of opportunistic approach: use funding for energy efficiency retrofits to make buildings more efficient & resilient
 - HomeStar, PACE bonds
- Going forward, adaptive planning may be critical determinant of regional economic competitiveness & cost of capital → this argues for a more strategic approach

Adaptation in Capital Improvement Plans

**TABLE A ★ 2009 Report Card for
America's Infrastructure**

Aviation	D
Bridges	C
Dams	D
Drinking Water	D-
Energy	D+
Hazardous Waste	D
Inland Waterways	D-
Levees	D-
Public Parks and Recreation	C-
Rail	C-
Roads	D-
Schools	D
Solid Waste	C+
Transit	D
Wastewater	D-

AMERICA'S
INFRASTRUCTURE G.P.A.

D

ESTIMATED 5 YEAR
INVESTMENT NEED

**\$2.2
TRILLION**

NOTES Each category was evaluated
on the basis of capacity,
condition, funding, future need,
operation and maintenance,
public safety and resilience

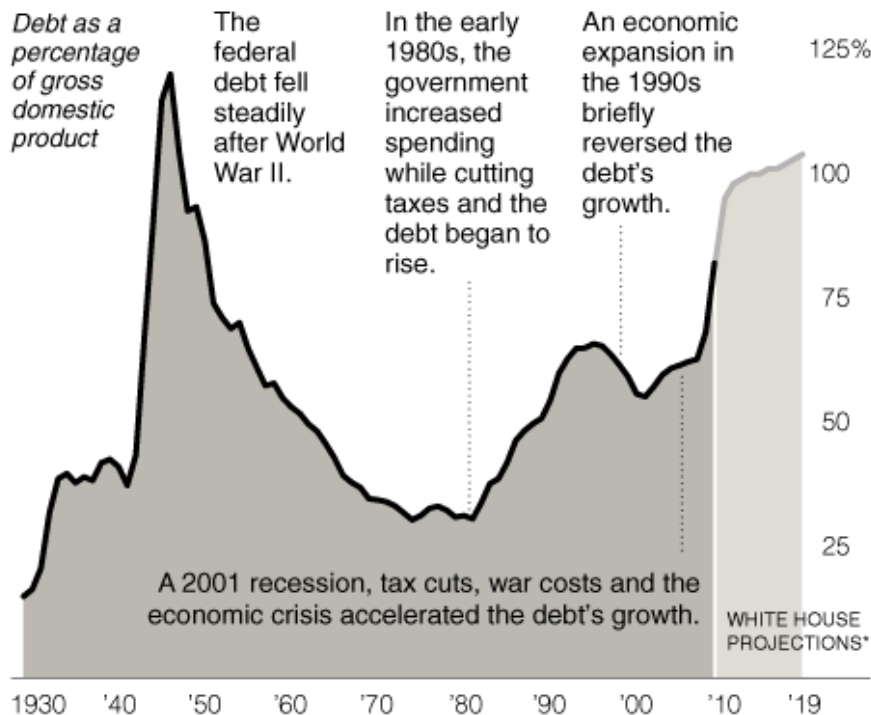
A = Exceptional
B = Good
C = Mediocre
D = Poor
F = Failing

- More than \$1 trillion in standing infrastructure needs remain unmet for next 5 years alone
- Many municipalities & regions have high debt burdens anticipating future growth
- Institutional investors, credit rating agencies will increasingly look to CIPs for evidence of managing limits to growth including climate change impacts

Source: American Society of Civil Engineers

As Future Spending May Be Constrained, Economic Imperative to Be Proactive on Adaptation Grows

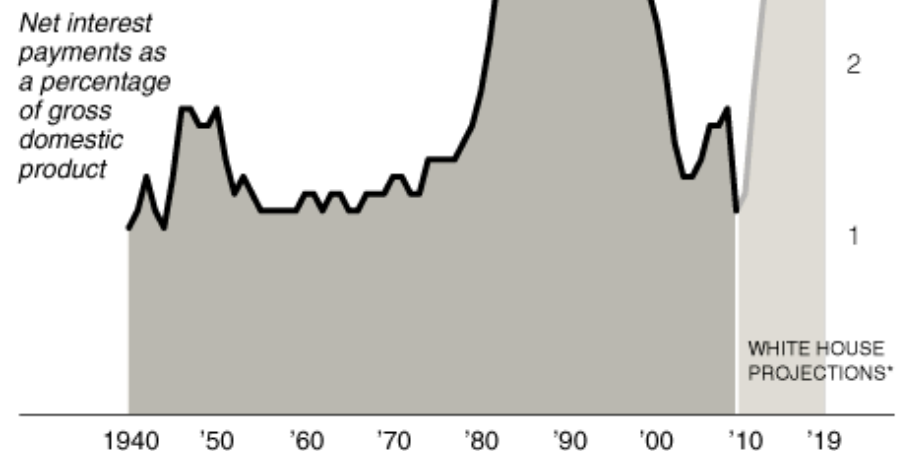
Running up the tab



Soaring payments

Much of the debt is currently financed at low interest rates, so payments are very low compared with historical levels.

After interest rates rise, payments are expected to return to the levels of the 1980s and 1990s.



Thank you

Sharlene Leurig
Ceres
leurig@ceres.org
617-247-0700 x127

